AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

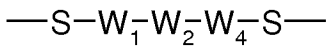
Listing of claims

1. 1. (withdrawn) A process for preparing a cross-linked polymer compound in a three-dimensional network wherein at least one activated polysaccharide or oligosaccharide derivative is dissolved in a polar organic solvent, comprising a radical of general formula (I) or (II)

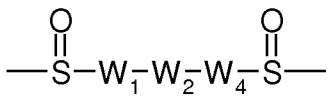
$$\text{-X-Y-A[CH}_2\text{-CH(R)-CH(R)-CH}_2\text{]m A-Y-X-} \qquad \text{(I)}$$

$$\text{-X-Y-A[CH}_2\text{-CH(R)-L-CH(R)-CH}_2\text{]m A-Y-X} \qquad \text{(II)}$$

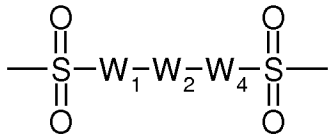
where X represents an oxygen atom of the group -NH, m is an integer other than zero equal at most to 5, R represents a hydrogen atom or a substituted or non-substituted, linear or branched alkyl radical having from 1 to 8 carbon atoms, Y represents a single bond, -NH-CO-group, -NH-CS-group or -CO-group, A represents a single bond, a linear or branched alkylene radical having from 1 to 21 carbon atoms, an arylene radical having from 6 to 18 carbon atoms or an aralkylene radical having from 7 to 40 carbon atoms, L represents a bis-thioether radical, of general formula (IIIa), bis-sulphoxide radical of general formula (IIIb), or bis-sulphone radical, of general formula (IIIc), or a bis-silane radical of general formula (IV), below:



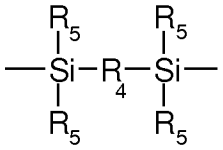
(IIIa)



(IIIb)



(IIIc)

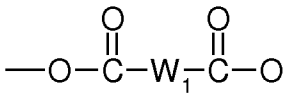


(IV)

where S represents a sulphur atom, O an oxygen atom and Si a silicon atom and where -W_1 and W_3, identical or different, each represent:

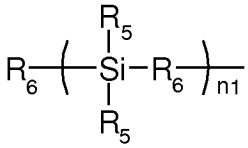
- a linear or branched alkylene radical having from 1 to 21 carbon atoms, an arylene radical having from 6 to 18 carbon atoms, or an aralkylene radical having from 7 to 40 carbon atoms;

- W_2 represents a single bond, W_1 an oxygen atom, a sulphur atom or a symmetrical diester of formula



(V)

-R_5 represents a linear or branched alkyl radical having from 1 to 5 carbon atoms or hydrogen, and R_4 represents the radical



(VI)

where R_6 is $(CH_2)_{n2}$ or oxygen and where n1 varies from 0 to 3000 and n2 from 0 to 10, the arylene radicals contained respectively in the radicals of general formulae (I) and (II)

being able to be substituted by one or more atoms or radicals, identical or different, of at least one halogen atom, at least one alkyl radical containing from 1 to 4 carbon atoms, at least one alkoxy radical containing from 1 to 4 carbon atoms or at least one nitro group; comprising:

reacting ethylene radicals of general formula (XI):

$$(CH[R]=CH-)_{m1}A-Y- \qquad (XI)$$

in which m1 is an integer other than zero equal at most to 5, R represents a hydrogen atom or a substituted or non-substituted, linear or branched alkyl radical, having from 1 to 8 carbon atoms, Y represents a single bond, -NH-CO- group, -NH-CS- group or -CO- group, A represents a single bond, a linear or branched alkylene radical having from 1 to 21 carbon atoms, an arylene radical having from 6 to 18 carbon atoms, or an aralkylene radical having from 7 to 40 carbon atoms, and where X represents X_1, X_2 or X_3 equally;

on themselves by action of a free radical initiator, in order to create a three-dimensional network between the chains of the polysaccharide derivative and characterized in that this network contains a radical of general formula (I);

- or reaction of the ethylene radicals of general formula (XI) with bis-sulphydryl compounds of general formula (XIII)

$$HS-W_1-W_2-W_3-SH \qquad (XIII)$$

wherein S, W_1, W_2 and W_3 are defined above, in the presence of a free radical initiator, in order to create a three-dimensional network between the chains of the polysaccharide derivative and characterized in that this network contains a radical of

general formula (II) and where the symbol (L) is represented y a bis-thioether radical of general formula (IIIa), the radicals of general formula (IIIa) being able to be subsequently transformed into radicals of general formula (IIIb) or (IIIc) by addition of a sufficient quantity of oxidizing agent, relative to the quantity of sulphur present in the said compounds;

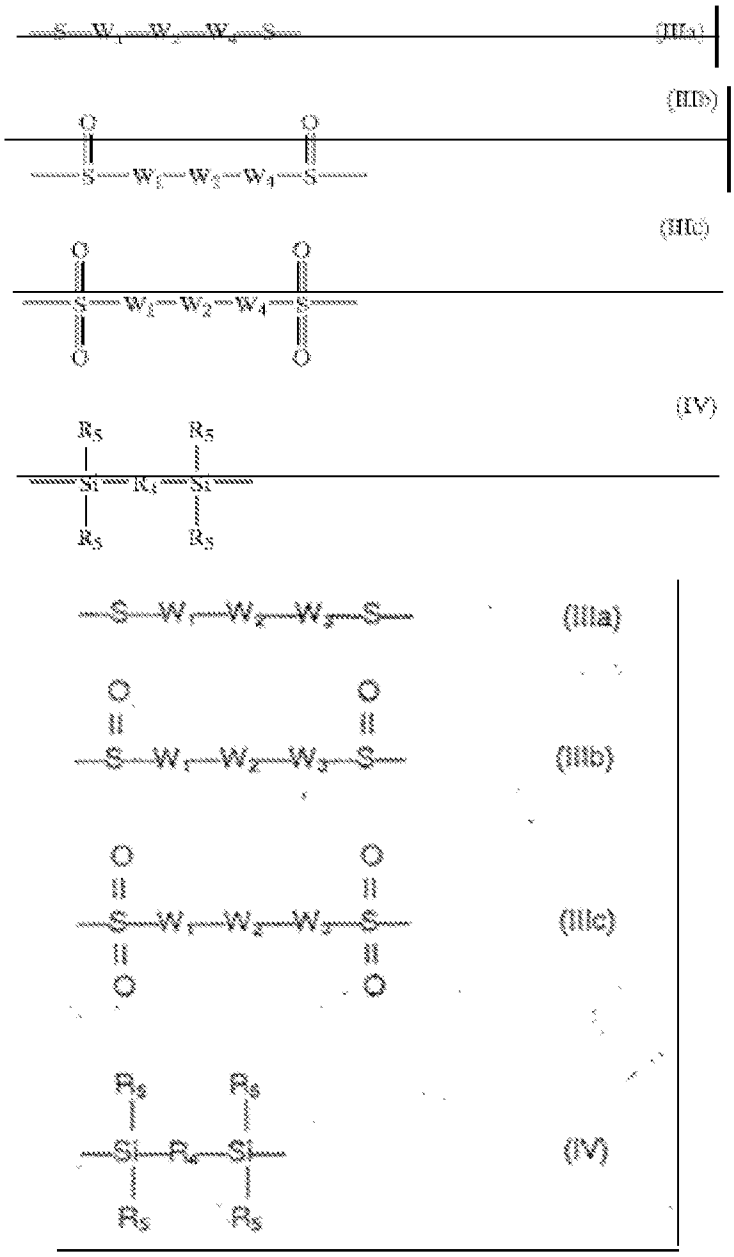
- or reaction of the ethylene radicals of general formula (XI) with bis-hydrogenosilane compounds of general formula (IV), in the presence of a metal catalyst, in order to create a three-dimensional network between the chains of the polysaccharide derivative and characterized in that this network contains a radical of general formula (II) and where the symbol (L) is represented by a bis-silane of general formula (IV).

2. (currently amended) A support material consisting essentially of a cross-linked polymer compound in a three-dimensional network, comprising a radical of general formula (I) or (II):

$$-X-Y-A[CH_2-CH(R)-CH(R)-CH_2]_mA-Y-X- \quad (I)$$

$$-X-Y-A[CH_2-CH(R)-L-CH(R)-CH_2]_mA-Y-X- \quad (II)$$

where X represents an oxygen atom or the group -NH, m is an integer other than zero equal at most to 5, R represents a hydrogen atom or a substituted or non-substituted, linear or branched alkyl radical having from 1 to 8 carbon atoms, Y represents a single bond, -NH-CO-group, -NH-CS-group or -CO-group, A represents a single bond, a linear or branched alkylene radical having from 1 to 21 carbon atoms, an arylene radical having from 6 to 18 carbon atoms or an aralkylene radical having from 7 to 40 carbon atoms, L represents a bis-thioether radical, of general formula (IIIa), bis-sulphoxide radical of general formula (IIIb), or bis-sulphone radical, of general formula (IIIc), or a bis-silane radical of general formula (IV), below:

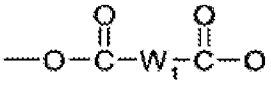


where S represents a sulphur atom, O an oxygen atom and Si a silicon atom and where

- W_1 and W_3, identical or different, each represent:

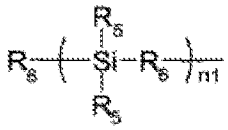
a linear or branched alkylene radical having from 1 to 21 carbon atoms, an arylene radical having from 6 to 18 carbon atoms, or an aralkylene radical having from 7 to 40 carbon atoms;

- W_2 represents a single bond, W_1, an oxygen atom, a sulphur atom or a symmetrical diester of formula



(V)

- R_5 represents a linear or branched alkyl radical having from 1 to 5 carbon atoms or hydrogen, and
- R_4 represents the radical



(VI)

where R_6 is $(CH_2)_{n2}$ or oxygen and where n1 varies from 0 to 3000 and n2 from 0 to 10, the arylene radicals contained respectively in the radicals of general formulae (I) and (II) being able to be substituted by one or more atoms or radicals, identical or different, of at least one halogen atom, at least one alkyl radical containing from 1 to 4 carbon atoms, at least one alkoxy radical containing from 1 to 4 carbon atoms or at least one nitro group.

3. (original) A support material according to claim 2, wherein the support material is in the form of a ball.

4. (original) A support material according to claim 2, wherein the support material contains a percentage of less than 80%.

5. (original) A support material according to claim 4, wherein the support material is obtained from a mineral or an organic porous support.

6. (withdrawn) A method of preparing a support material according to claim 2 and containing essentially a cross-linked polymer compound, wherein a polysaccharide or oligosaccharide derivative is dissolved in an organic polar solvent then precipitated in the form of at least one ball, the ball is then cross-linked in situ, wherein the ball consists essentially of the cross-linked polymer compound.

7. (withdrawn) A method of preparing a support material according to claim 3 in the form of a precipitated ball, wherein a polysaccharide or an oligosaccharide derivative is dissolved in a polar organic solvent and that the organic solution obtained is poured onto an aqueous solution containing an anionic surfactant and an emulsion stabilizer and that the emulsion obtained is heated in order to eliminate the organic solvent.

8. (withdrawn) A method of preparing according to claim 7, wherein the polar organic solvent is mesityl oxide, the anionic surfactant is sodium dodecyl sulphate and the emulsion stabilizer is a polyhydroxylated derivative possessing a number of carbon atoms greater than 16.

9. (withdrawn) A method of preparing according to claim 7, wherein the ball has a dimension of 0.1-300µm and a specific surface area of 10-100 m^2/g.

10. (withdrawn) A method of preparing according to claim 7, wherein the precipitated ball of a polysaccharide derivative is cross-linked in situ, so that the cross-linked polymer compound obtained in the form of a ball constituting a support material which is insoluble in a polar organic solvent, and the ball of support material has a dimension of 0.1-300µm and a specific surface area of 10-100 m^2/g.

11. (withdrawn) A method of preparing a support material according to claim 4, comprising adding a solution of an organic solvent containing the polysaccharide or oligosaccharide derivative to a powdery commercial porous support, heating the medium in order to evaporate the solvent, suspending the powder obtained and containing the polysaccharide or oligosaccharide derivative in a solvent in which the compounds are insoluble and refluxing the medium; adding a cross-linking agent after reaction, and filtering and washing the suspension in a polar organic solvent in which the polysaccharide or oligosaccharide derivatives are soluble in order to eliminate these later.

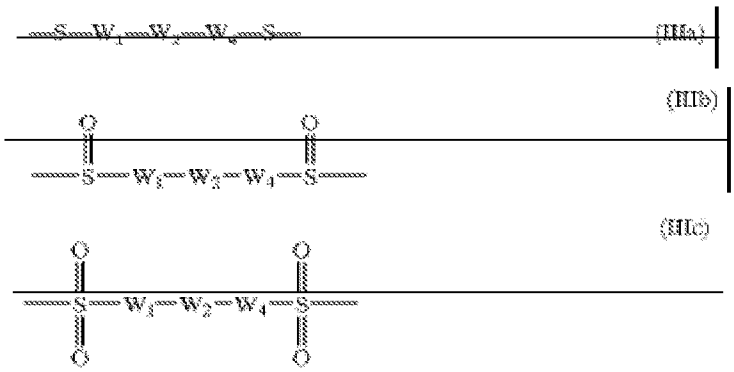
12. (withdrawn) A process for preparing and separating enantiomers by employing means of liquid, gaseous or supercritical chromatography using polar organic solvents, comprising exposing enantiomers to a support material according to claim 2.

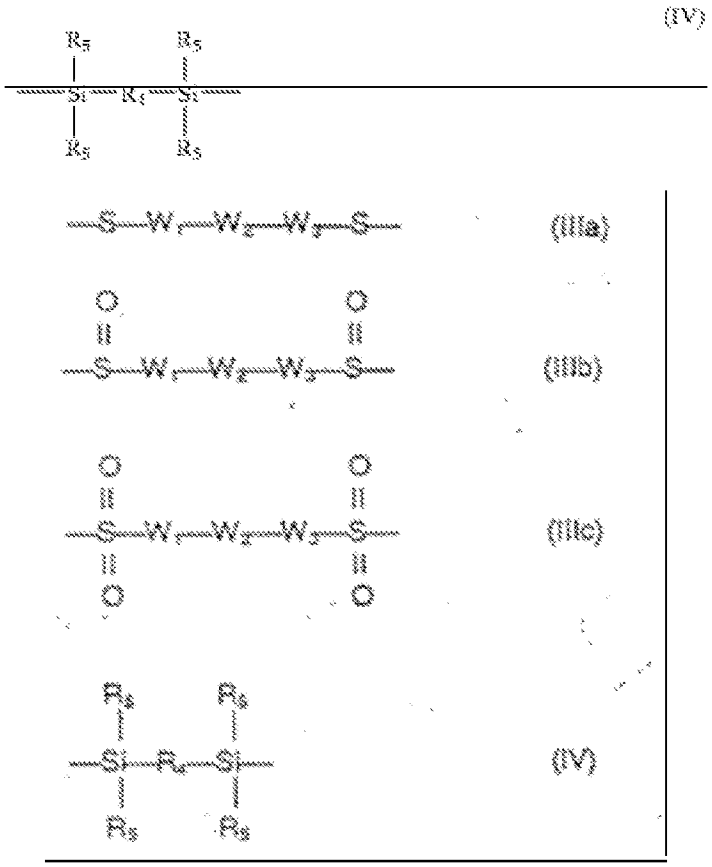
13. (currently amended) A percolation membrane comprising a cross-linked polymer compound in a three-dimensional network, comprising a radical of general formula (I) or (II):

$$-X-Y-A[CH_2-CH(R)-CH(R)-CH_2]_mA-Y-X- \quad (I)$$

$$-X-Y-A[CH_2-CH(R)-L-CH(R)-CH_2]_mA-Y-X- \quad (II)$$

where X represents an oxygen atom or the group -NH, m is an integer other than zero equal at most to 5, R represents a hydrogen atom or a substituted or non-substituted, linear or branched alkyl radical having from 1 to 8 carbon atoms, Y represents a single bond, -NH-CO-group, -NH-CS-group or -CO-group, A represents a single bond, a linear or branched alkylene radical having from 1 to 21 carbon atoms, an arylene radical having from 6 to 18 carbon atoms or an aralkylene radical having from 7 to 40 carbon atoms, L represents a bis-thioether radical, of general formula (IIIa), bis-sulphoxide radical of general formula (IIIb), or bis-sulphone radical, of general formula (IIIc), or a bis-silane radical of general formula (IV), below:



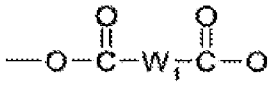


where S represents a sulphur atom, O an oxygen atom and Si a silicon atom and where

- W_1 and W_3, identical or different, each represent:

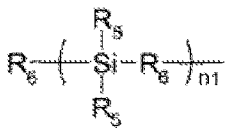
a linear or branched alkylene radical having from 1 to 21 carbon atoms, an arylene radical having from 6 to 18 carbon atoms, or an aralkylene radical having from 7 to 40 carbon atoms;

- W_2 represents a single bond, W_1, an oxygen atom, a sulphur atom or a symmetrical diester of formula



(V)

- R_5 represents a linear or branched alkyl radical having from 1 to 5 carbon atoms or hydrogen, and
- R_4 represents the radical



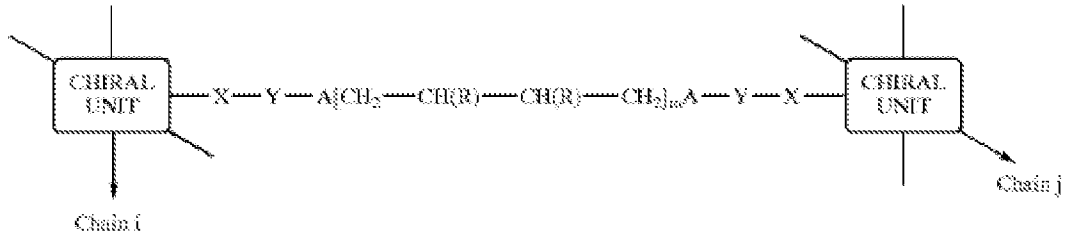
(VI)

where R_6 is $(CH_2)_{n2}$ or oxygen and where n1 varies from 0 to 3000 and n2 from 0 to 10, the arylene radicals contained respectively in the radicals of general formulae (I) and (II) being able to be substituted by one or more atoms or radicals, identical or different, of at least one halogen atom, at least one alkyl radical containing from 1 to 4 carbon atoms, at least one alkoxy radical containing from 1 to 4 carbon atoms or at least one nitro group.

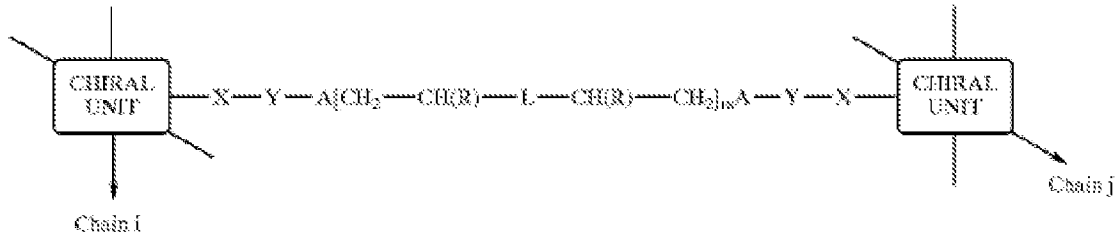
14. (withdrawn) A process of organic synthesis in a heterogeneous phase comprising a support material according to claim 2.

15. (previously presented) A support material according to claim 2, wherein the radical of general formulae (I) or (II) is bound to at least one osidic chiral unit of a linear, branched or cyclic linkage of a polysaccharide or oligosaccharide derivative according to the general formulae (VII) and (VIII):

(VII)



(VIII)



where X, Y, A, R, L each have the same meaning as defined in claim 2 and the chiral unit represents an osidic chiral unit of a linear, branched or cyclic linkage of a polysaccharide or oligosaccharide derivative, wherein "chain i" and "chain j" represent

chiral units at each end of the radicals of formulae (I) and (II), situated as separate chains or separate linkages of osidic units, within the polysaccharide or oligosaccharide.

16. (previously presented) A support material according to claim 2, wherein L corresponds to formula (IIIa).

17. (previously presented) A support material according to claim 2, wherein L corresponds to formula (IIIb).

18. (previously presented) A support material according to claim 2, wherein L corresponds to formula (IIIc).

19 (previously presented) A support material according to claim 2, wherein L corresponds to formula (IV).